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(54) **Apparatus and method for a liquid cooled shield for improved piercing performance**

(57) A shield for a plasma arc torch that pierces and cuts a metallic workpiece producing a splattering of molten metal directed at the torch, the shield protecting consumable components of the plasma arc torch from the splattering molten metal. The shield can include a body, a first surface of the body configured to be contact-cooled by a gas flow, a second surface of the body configured to be contact-cooled by a liquid flow, and a seal assembly configured to be secured to the body and disposed relative to the second surface configured to retain the liquid flow contact - cooling the second surface.

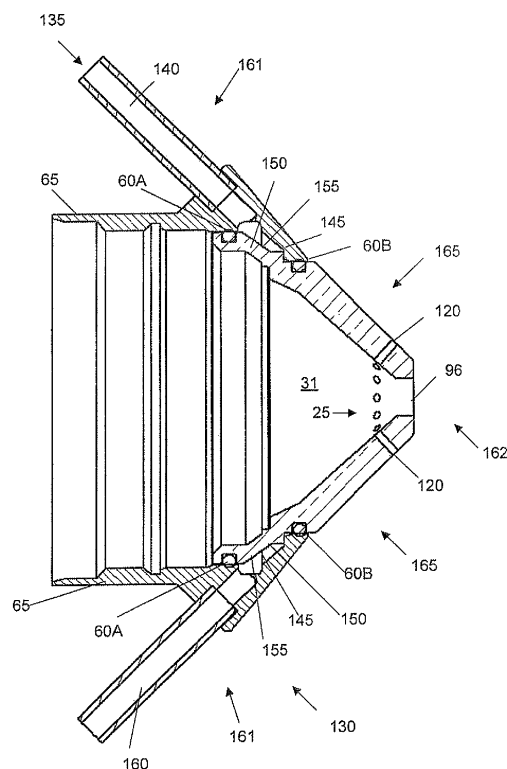


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 24 April 2013	Examiner Capostagno, Eros
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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